

APPENDIX

(See attached)

SEQUENCE LISTING

<110> New York Medical College
 <120> Splice Choice Antagonists as Therapeutic Agents
 <130> 51230-00601
 <140> 09/849,967
 <141> 2001-05-08
 <160> 10
 <170> PatentIn version 3.5
 <210> 1
 <211> 1689
 <212> DNA
 <213> Gallus gallus

 <220>
 <221> Misc_Feature
 <222> (1)..(1689)
 <223> Full length cDNA sequence of Gallus gallus hnRNP A1.

 <220>
 <221> Misc_Feature
 <222> (141)..(1276)
 <223> Open reading frame of cDNA sequence from Gallus gallus hnRNP A1.

 <400> 1
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 agcgggctgt aaggcgcgag ctgaacgctg gcacggtttc ctatagctaa aagaaaggcc 120
 gagttagagt acccttccaa aatggctgct attaaggaag agagagaggt ggaagattac 180
 aagagaaaaa ggaagacgat cagcacaggc catgagccta aggagccaga gcagttgaga 240
 aagctgttca ttggaggctt gagcttcgag acgacggatg atagcttgag agagcattt 300
 gaaaaaatggg gcacactcac ggactgtgtg gtgatgagag acccacaac aaacagttcc 360
 agaggctttg gctttgttac ttactcttgc gtggaagagg tggatgcggc catgagcgct 420
 cgaccacata aggtggatgg acgtgtggtt gaaccaaaaga gacagtttc aagggaggat 480
 tctgtaaagc ctggggcgca tctcacagta aagaaaatat ttgttggtgg cattaagaa 540
 gatacagaag aatataattt aaggggttac ttgaaacat atggcaagat cgaacgata 600
 gaagtcattg aagacagaca aagtggaaag aaaagaggct tcgcttttgt aacttttgat 660
 gatcacgata cagttgataa aattgttgtt cagaaatacc atactataaa tggtcataac 720
 tgcgaagata aaaaagcact ctcaaaacaa gagatgcaga ctgccagctc tcagagaggt 780
 cgtgggggtg gttcaggcaa cttcatgggt cgtggaaatt ttggaggtgg ttggagaaac 840
 ttggtccgag gaggaaactt tgggtgaaga ggaggctatg gtggtggtgg cggtggtggg 900
 agcagaggaa gctttggggg tgggtgatga tacaacggat ttggtgatgg ttgcaactat 960

ggaggtggtc ctggctatgg cagcagaggg ggttatggtg gtggtggagg accaggatat 1020
 ggaaaccag gtggtggata tggaggtgga ggaggaggat atggtggcta caatgaagga 1080
 ggcaattttg gaggtggtaa ttatggaggc agtggaaact acaatgactt tggtaactac 1140
 agtggacagc agcagtccea ttacgggtccc atgaaagggtg gtggcagttt tgggtgtaga 1200
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 cgaggagtgg tcaggaaagc tgcagtttac tttgagacag tcgtcccaaa tgcattagag 1380
 gaactgtaaa atctgccaca gaaggaaacga tgatccatag tcagaaaagt tactgcagct 1440
 taacaggaa acccttcttg ttcaggactg tcatagccac agtttgcaaa aagagcagct 1500
 attggttaat gcaatgtagt gtcgttagat gtacatcctg aggtctttat ctgttgtagc 1560
 tttgtctttc ttttttcttt ttattttccc attacatcag gtatatgcc ctgtaaatgg 1620
 tggtagtggt acaaggaata aacaaattaa ggaatttttg gcttttcaaa aaaaaaaaaa 1680
 aaaaaaaaaa 1689

<210> 2
 <211> 378
 <212> PRT
 <213> Gallus gallus

<220>
 <221> PEPTIDE
 <222> (1)..(378)
 <223> Amino acid sequence of chicken hnRNP A1.

<400> 2

Met Ala Ala Ile Leu Gly Gly Ala Gly Val Gly Ala Thr Leu Ala Leu
1 5 10 15

Ala Leu Thr Ile Ser Thr Gly His Gly Pro Leu Gly Pro Gly Gly Leu
20 25 30

Ala Leu Leu Pro Ile Gly Gly Leu Ser Pro Gly Thr Thr Ala Ala Ser
35 40 45

Leu Ala Gly Gly Pro Gly Leu Thr Gly Thr Leu Thr Ala Cys Val Val
50 55 60

Met Ala Ala Pro Gly Thr Leu Ala Ser Ala Gly Pro Gly Pro Val Thr
65 70 75 80

Thr Ala Thr Val Gly Gly Val Ala Ala Ala Met Ser Ala Ala Pro His
85 90 95

Leu Val Ala Gly Ala Val Val Gly Pro Leu Ala Ala Val Ser Ala Gly
 100 105 110
 Ala Ser Val Leu Pro Gly Ala His Leu Thr Val Leu Leu Ile Pro Val
 115 120 125
 Gly Gly Ile Leu Gly Ala Thr Gly Gly Thr Ala Leu Ala Gly Thr Pro
 130 135 140
 Gly Thr Thr Gly Leu Ile Gly Thr Ile Gly Val Met Gly Ala Ala Gly
 145 150 155 160
 Ser Gly Leu Leu Ala Gly Pro Ala Pro Val Thr Pro Ala Ala His Ala
 165 170 175
 Thr Val Ala Leu Ile Val Val Gly Leu Thr His Thr Ile Ala Gly His
 180 185 190
 Ala Cys Gly Ala Leu Leu Ala Leu Ser Leu Gly Gly Met Gly Thr Ala
 195 200 205
 Ser Ser Gly Ala Gly Ala Gly Gly Gly Ser Gly Ala Pro Met Gly Ala
 210 215 220
 Gly Ala Pro Gly Gly Gly Gly Gly Ala Pro Gly Ala Gly Gly Ala Pro
 225 230 235 240
 Gly Gly Ala Gly Gly Thr Gly Gly Gly Gly Gly Gly Gly Ser Ala
 245 250 255
 Gly Ser Pro Gly Gly Gly Ala Gly Thr Ala Gly Pro Gly Ala Gly Gly
 260 265 270
 Ala Thr Gly Gly Gly Pro Gly Thr Gly Ser Ala Gly Gly Thr Gly Gly
 275 280 285
 Gly Gly Gly Pro Gly Thr Gly Ala Pro Gly Gly Gly Thr Gly Gly Gly
 290 295 300
 Gly Gly Gly Thr Gly Gly Thr Ala Gly Gly Gly Ala Pro Gly Gly Gly
 305 310 315 320
 Ala Thr Gly Gly Ser Gly Ala Thr Ala Ala Pro Gly Ala Thr Ser Gly
 325 330 335
 Gly Gly Gly Ser Ala Thr Gly Pro Met Leu Gly Gly Gly Ser Pro Gly
 340 345 350

Gly Ala Ser Ser Gly Ser Pro Thr Gly Gly Gly Thr Gly Ser Gly Ser
 355 360 365

Gly Ser Gly Gly Thr Gly Gly Ala Ala Pro
 370 375

<210> 3
 <211> 320
 <212> PRT
 <213> Homo sapiens

<220>
 <221> PEPTIDE
 <222> (1)..(320)
 <223> Amino acid sequence of human hnRNP A1.

<400> 3

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Phe Ile Gly Gly Leu Ser Phe Glu Thr Thr Asp Glu Ser Leu Arg Ser
 20 25 30

His Phe Glu Gln Thr Gly Thr Leu Thr Asp Cys Val Val Met Arg Asp
 35 40 45

Pro Asn Thr Lys Arg Ser Arg Gly Phe Gly Phe Val Thr Tyr Ala Thr
 50 55 60

Val Glu Glu Val Asp Ala Ala Met Asn Ala Arg Pro His Lys Val Asp
 65 70 75 80

Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser Arg Glu Asp Ser Gln
 85 90 95

Arg Pro Gly Ala His Leu Thr Val Lys Lys Ile Phe Val Gly Gly Ile
 100 105 110

Lys Glu Asp Thr Glu Glu His His Leu Arg Asp Tyr Phe Glu Gln Tyr
 115 120 125

Gly Lys Ile Glu Val Ile Glu Ile Met Thr Asp Arg Gly Ser Gly Lys
 130 135 140

Lys Ala Gly Phe Ala Phe Val Thr Phe Asp Asp His Asp Ser Val Asp
 145 150 155 160

Lys Ile Val Ile Gln Lys Tyr His Thr Val Asn Gly His Asn Cys Glu
 165 170 175

Val Arg Lys Ala Leu Ser Lys Gly Glu Met Ala Ser Ala Ser Ser Ser
 180 185 190
 Gln Arg Gly Arg Ser Gly Ser Gly Ala Phe Gly Gly Gly Arg Gly Gly
 195 200 205
 Gly Phe Gly Gly Asn Asp Asn Phe Gly Arg Gly Gly Asn Phe Ser Gly
 210 215
 Arg Gly Gly Phe Gly Gly Ser Arg Gly Gly Gly Tyr Gly Gly Ser
 225 230 235 240
 Gly Asp Gly Tyr Asn Gly Phe Gly Asn Ala Gly Ser Asn Phe Gly Gly
 245 250 255
 Gly Gly Ser Tyr Asn Asp Phe Gly Asn Tyr Asn Asn Gln Ser Ser Asn
 260 265 270
 Phe Gly Pro Met Lys Gly Gly Asn Phe Gly Gly Arg Ser Ser Gly Pro
 275 280 285
 Tyr Gly Gly Gly Gly Gln Tyr Pro Ala Lys Pro Arg Asn Gln Gly Gly
 290 295 300
 Tyr Gly Gly Ser Ser Ser Ser Ser Tyr Gly Ser Gly Arg Arg Pro
 305 310 315 320

<210> 4
 <211> 1136
 <212> DNA
 <213> Gallus gallus

<220>
 <221> Misc_Feature
 <222> (1)..(1136)
 <223> Open reading frame of cDNA for chicken hnRNP A1.

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 gagcttcgag acgacggatg atagcttgag agagcacttt gaaaaatggg gcacactcac 180
 ggactgtgtg gtgatgagag acccacaac aaaacgttcc agaggccttg gctttgtttac 240
 ttactcttgc gtggaagagg tggatgcggc catgagcgct cgaccacata aggtggatgg 300
 acgtgtggtt gaaccaaaga gacgagtttc aaggaggagg tctgtaaagc ctggggcgca 360
 tctcacagta aagaaaatat ttgttggtgg cattaagaa gatacagaag aatataattt 420
 aaggggggtac ttgaaacat atggcaagat cgaaacgata gaagtcattg aagacagaca 480
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aagtggaaaag aaaagaggct tcgcttttgt aacttttggat gatcacgata cagttgataa	540
aattgttggt cagaaatacc atactataaa tggtcataac tgcgaagata aaaaagcact	600
ctcaaaacaa gagatgcaga ctgccagctc tcagagagggt cgtgggggtg gttcaggcaa	660
cttcattgggt cgtggaaatt ttggagggtg tggaggaaac tttggccgag gaggaaactt	720
tgggtggaaga ggaggctatg ggggtggtg tggcggtggt gggagcagag gaagcttttg	780
gggtggtgat ggatacaac gatttgggtga tgggtggcaac tatggagggtg gtcctggcta	840
tggcagcaga gggggttatg gtggtggtg aggaccagga tatggaaacc caggtggtg	900
atatggagggt ggaggaggag gatatggtg ctacaatga ggaggcaatt ttggagggtg	960
taattatgga ggcagtgga actacaatga ctttggtaac tacagtggaac agcagcagtc	1020
caattacggt cccatgaaa gtggtggcag ttttggtggt agaagttcag gcagtcacct	1080
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<210> 5
 <211> 10
 <212> RNA
 <213> Homo sapiens

<220>
 <221> Misc_Feature
 <222> (1)..(10)
 <223> Exonic splice silencer (ESS) nucleic acid sequence for hnRN A1.

<400> 5
 uagggcaggc 10

<210> 6
 <211> 10
 <212> RNA
 <213> Gallus gallus

<220>
 <221> Misc_Feature
 <222> (1)..(10)
 <223> Exonic splice silencer (ESS) nucleic acid sequence for hnRNP A1.

<400> 6
 uagggaggc 10

<210> 7
 <211> 8
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SITE
 <222> (1)..(1)
 <223> Xaa represents a Lysine or an Arginine

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<220>
<221> SITE
<222> (3)..(3)
<223> Xaa represents a phenylalanine or tyrosine.

<220>
<221> SITE
<222> (4)..(4)
<223> Xaa represents a glycine or alanine.

<220>
<221> Misc_Feature
<222> (7)..(7)
<223> Xaa can be any naturally occurring amino acid.

<220>
<221> SITE
<222> (8)..(8)
<223> Xaa represents a phenylalanine or tyrosine.

<400> 7
Xaa Gly Xaa Xaa Pro Val Xaa Xaa
1 5

<210> 8
<211> 148
<212> PRT
<213> Homo sapiens

<220>
<221> Misc_Feature
<222> (1)..(6)
<223> Correspond to amino acids 16 - 21 of hnRNP A1.

<220>
<221> Misc_Feature
<222> (7)..(39)
<223> Correspond to amino acids 22 - 54 of hnRNP A1.

<220>
<221> Misc_Feature
<222> (40)..(47)
<223> Correspond to amino acids 55 - 62 of hnRNP A1.

<220>
<221> Misc_Feature
<222> (48)..(91)
<223> Correspond to amino acids 63 - 106 of hnRNP A1.

<220>
<221> Misc_Feature
<222> (92)..(97)
<223> Correspond to amino acids 107 - 112 of hnRNP A1.

<220>
<221> Misc_Feature
<222> (98)..(140)
<223> Correspond to amino acids 113 - 145 of hnRNP A1.

<220>

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<221> Misc_Feature
 <222> (141)..(148)
 <223> Correspond to amino acids 146 - 153 of hnRNP A1.
 <400> 8
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 20 25 30
 Asp Pro Asn Thr Lys Arg Ser Arg Gly Phe Gly Pro Val Thr Tyr Ala
 35 40 45
 Thr Val Glu Glu Val Asp Ala Ala Met Asn Ala Arg Pro His Lys Val
 50 55 60
 Asp Gly Arg Val Val Glu Pro Lys Arg Ala Val Ser Arg Glu Asp Ser
 65 70 75 80
 Gln Arg Pro Gly Ala His Leu Thr Val Lys Lys Ile Phe Val Gly Gly
 85 90 95
 Ile Thr Val Lys Lys Ile Phe Val Gly Gly Ile Lys Glu Asp Thr Glu
 100 105 110
 Glu His His Leu Arg Asp Tyr Phe Glu Gln Tyr Gly Lys Ile Glu Val
 115 120 125
 Ile Glu Ile Met Thr Asp Arg Gly Ser Gly Lys Lys Arg Gly Phe Ala
 130 135 140
 Phe Val Thr Phe
 145
 <210> 9
 <211> 28
 <212> PRT
 <213> Homo sapiens
 <220>
 <221> Misc_Feature
 <222> (1)..(28)
 <223> hnRNP A2 is defined as human hnRNP core protein.
 <220>
 <221> Misc_Feature
 <222> (1)..(28)
 <223> OTHER: Max number of positions shown; some may be missing.
 <220>
 <221> Misc_Feature

<222> (1)..(6)
 <223> Correspond to amino acids 11 - 16 of hnRNP A2.
 <220>
 <221> Misc_Feature
 <222> (7)..(14)
 <223> Correspond to amino acids 50 - 57 of hnRNP A2.
 <220>
 <221> Misc_Feature
 <222> (15)..(20)
 <223> Correspond to amino acids 102 - 107 of hnRNP A2.
 <220>
 <221> Misc_Feature
 <222> (21)..(28)
 <223> Correspond to amino acids 141 - 148 of hnRNP A2.
 <400> 9
 Leu Phe Ile Gly Gly Leu Ala Gly Phe Gly Pro Val Thr Phe Leu Phe
 1 5 10 15
 Val Gly Gly Ile Arg Gly Phe Gly Phe Val Thr Phe
 20 25
 <210> 10
 <211> 12
 <212> PRT
 <213> Homo sapiens
 <220>
 <221> Misc_Feature
 <222> (1)..(12)
 <223> hnRNP is defined as a human hnRNP core protein.
 <220>
 <221> Misc_Feature
 <222> (1)..(12)
 <223> Correspond to amino acids 3 - 14 of hnRNP B2.
 <400> 10
 Lys Thr Leu Glu Thr Val Pro Leu Glu Arg Lys Lys
 1 5 10